

**What is claimed is:**

1. A bipolar cardiac lead, comprising:
  - a) an elongated lead body having opposed proximal and distal end portions, and defining a longitudinal axis;
  - b) an electrode housing operatively associated with the distal end portion of the lead body for stimulating cardiac tissue; and
  - c) a helical fixation screw disposed within the electrode housing along an axis extending generally perpendicular to the longitudinal axis of the lead body and mounted for movement between an axially retracted position and an axially extended position to affix the electrode housing to the cardiac tissue, wherein at least a portion of the helical fixation screw is electrically active.
2. The bipolar cardiac lead as recited in claim 1, wherein the helical fixation screw depends from an externally threaded plug supported within an internally threaded collar disposed within the electrode housing.
3. The bipolar cardiac lead as recited in claim 2, wherein the externally threaded plug is configured for engagement with a screwdriver tipped stylet extended into the electrode housing through a self-sealing opening formed in the electrode housing.

4. The bipolar cardiac lead as recited in claim 3, wherein the screwdriver tipped stylet is positioned outside the lead body.

5. The bipolar cardiac lead as recited in claim 3, further including a flexible guiding sheath positioned outside the lead body to accommodate the screwdriver tipped stylet.

6. The bipolar cardiac lead as recited in claim 5, wherein the guiding sheath has at least one bendable section.

7. The bipolar cardiac lead as recited in claim 1, wherein the electrode housing includes a ring electrode.

8. The bipolar cardiac lead as recited in claim 7, further including an insulating tube coaxially disposed within the ring electrode.

9. The bipolar cardiac lead as recited in claim 8, wherein the insulating tube is formed from a compound including an elastomer and a medicament.

10. The bipolar cardiac lead as recited in claim 9, wherein the compound from which the insulating tube is formed includes silicone and a steroid.

11. The bipolar cardiac lead as recited in claim 10, wherein the compound from which the insulating tube is formed has a durometer of about 40 to 90 Shore A.

12. The bipolar cardiac lead as recited in claim 10, wherein the compound from which the insulating tube is formed includes about 15% to 25% by weight steroid.

13. The bipolar cardiac lead as recited in claim 7, wherein the ring electrode serves as an anode and a tip portion of the helical fixation screw serves as a cathode.

14. The bipolar cardiac lead as recited in claim 7, wherein the ring electrode and a proximal portion of the helical fixation screw serve as an anode, and a tip portion of the helical fixation screw serves as a cathode.

15. The bipolar cardiac lead as recited in claim 14, wherein the helical fixation screw further includes an insulator separating the proximal portion from the tip portion of the helical fixation screw.

16. The bipolar cardiac lead as recited in claim 1, wherein in the axially extended position, the helical fixation screw penetrates into heart tissue a length of up to about 10mm.

17. The bipolar cardiac lead as recited in claim 1, wherein in the axially extended position, the helical fixation screw penetrates into heart tissue a length of about 3mm to 10mm.

18. The bipolar cardiac lead as recited in claim 1, further including a needle-shaped fixation pin positioned within the helical fixation screw.

19. The bipolar cardiac lead as recited in claim 18, wherein the length of the helical fixation screw is about 7mm to 10mm, and the length of the fixation pin is about 5mm to 7mm.

20. The bipolar cardiac lead as recited in claim 1, wherein the lead body contains at least one conductor coil.

21. The bipolar cardiac lead as recited in claim 20, further including an insulating sheath of biocompatible material covering the at least one conductor coil.

22. The bipolar cardiac lead as recited in claim 1, further including a connector operatively associated with the proximal end of the lead body.

23. A bipolar cardiac lead, comprising:

- a) an elongated lead body having opposed proximal and distal end portions, and defining a longitudinal axis;
- b) an electrode housing operatively associated with the distal end portion of the lead body, the electrode housing including a ring electrode for stimulating cardiac tissue; and
- c) a helical fixation screw disposed within the electrode housing along an axis extending generally perpendicular to the longitudinal axis of the lead body and mounted for movement between an axially retracted position and an axially extended position to affix the electrode housing to the cardiac tissue, wherein the helical fixation screw depends from an externally threaded plug supported within an internally threaded collar disposed within the electrode housing, the externally threaded plug configured for engagement with a screwdriver tipped stylet extended into the electrode housing.

24. The bipolar cardiac lead as recited in claim 23, wherein the screwdriver tipped stylet is positioned outside the lead body.

25. The bipolar cardiac lead as recited in claim 23, further including a flexible guiding sheath positioned outside the lead body to accommodate the screwdriver tipped stylet.

26. The bipolar cardiac lead as recited in claim 23, further including an insulating tube coaxially disposed within the ring electrode.

27. The bipolar cardiac lead as recited in claim 26, wherein the insulating tube is formed from a compound comprising an elastomer and a medicament.

28. The bipolar cardiac lead as recited in claim 27, wherein the compound from which the insulating tube is formed includes silicone and a steroid.

29. The bipolar cardiac lead as recited in claim 28, wherein the compound from which the insulating tube is formed has a durometer of about 40 to 90 Shore A.

30. The bipolar cardiac lead as recited in claim 28, wherein the compound from which the insulating tube is formed includes about 15% to 25% by weight steroid.

31. The bipolar cardiac lead as recited in claim 23, wherein the helical fixation screw includes a proximal portion and a distal portion terminating in a tip portion.

32. The bipolar cardiac lead as recited in claim 31, wherein the ring electrode serves as an anode and the tip portion of the helical fixation screw serves as a cathode.

33. The bipolar cardiac lead as recited in claim 31, wherein the ring electrode and the proximal portion of the helical fixation screw serve as an anode, and the tip portion serves as a cathode.

34. The bipolar cardiac lead as recited in claim 33, wherein the helical fixation screw further includes an insulator separating the proximal portion from the tip portion of the helical fixation screw.

35. The bipolar cardiac lead as recited in claim 23, wherein a self-sealing opening is formed in the electrode housing for receiving the screwdriver tipped stylet.

36. A cardiac lead implantation kit, comprising:

- a) a bipolar cardiac lead including:
  - i) an elongated lead body having opposed proximal and distal end portions, and defining a longitudinal axis;
  - ii) an electrode housing operatively associated with the distal end portion of the lead body for stimulating cardiac tissue; and
  - iii) a helical fixation screw disposed within the electrode housing along an axis extending generally perpendicular to the longitudinal axis of the lead body and mounted for movement between an axially retracted position and an axially extended position to affix the electrode housing to the cardiac tissue;
- b) a screwdriver tipped stylet for facilitating movement of the helical fixation screw; and
- c) a flexible guide sheath for directing the tip of the stylet to the electrode housing.

37. The cardiac lead implantation kit as recited in claim 36, wherein a self-sealing opening is formed in the electrode housing for receiving the screwdriver tipped stylet.

38. The cardiac lead implantation kit as recited in claim 37, wherein the electrode housing includes a ring electrode.



39. The cardiac lead implantation kit as recited in claim 38, further including an insulating tube coaxially disposed within the ring electrode.

40. The cardiac lead implantation kit as recited in claim 39, wherein the insulating tube is formed from a compound comprising an elastomer and a medicament.

41. The cardiac lead implantation kit as recited in claim 40, wherein the compound from which the insulating tube is formed includes silicone and a steroid.

42. The cardiac lead implantation kit as recited in claim 41, wherein the compound from which the insulating tube is formed has a durometer of about 40 to 90 Shore A.

43. The cardiac lead implantation kit as recited in claim 41, wherein the compound from which the insulating tube is formed includes about 15% to 25% by weight steroid.

44. The cardiac lead implantation kit as recited in claim 37, wherein the ring electrode serves as an anode and a tip portion of the helical fixation screw serves as a cathode.

45. The cardiac lead implantation kit as recited in claim 44, wherein the helical fixation screw further includes an insulator separating the ring electrode from the tip portion of the helical fixation screw.

46. The cardiac lead implantation kit as recited in claim 37, wherein the ring electrode and a proximal portion of the helical fixation screw serve as an anode, and a tip portion of the helical fixation screw serves as a cathode.

47. The cardiac lead implantation kit as recited in claim 46, wherein the helical fixation screw further includes an insulator separating the proximal portion from the tip portion of the helical fixation screw.